

Meeting 1 1/21/2016

Teams: Flyrollers, FIGs

Meeting time= 30 min

Thursday 930AM ECE Conference Room /optional

Flyrollers:

Task and Goals: Various ECE goals

Purchases: PCB fabrication, headers, ribbon cables, etc, figure out how much, how long

Next week goals: Pinouts, headers, encoders, code composer

FIGs:

Formal agenda necessary

Find out who is in charge of budget, minutes, agenda

Budget consultant: Renee Schlickemeyer ISGC office 3rd floor BEL

Client interview needed- come up with questions, Flyrollers can be internal client. Scheduled for Thursday 1/28

Start Portfolio

Portfolio Contains

- Minutes
- Datasheets
- Relevant Information

Meeting 2 1/26/2016

Client interview questions emailed by 6:00PM 1/27/16

Jesse will be team leader and pick best questions and compile

Client interview scheduled for 4:30PM 1/28/16 in ECE Conference Room

Meeting 3 1/28/2016

Flyroller team's email alias:
engr-flyrollers.uidaho.edu

CLIENT INTERVIEW ANSWERS

-Design

1. Functional and intuitive
2. I hope they do not, have modular design in case of
3. Communicating between groups and each other
4. Mechanical-, electrical-, computer-engineers, physicists, eventually CS
5. Years/long-term
6. Combination of both, support basic user and researcher
7. Not very high priority

-Technology

1. Windows 7/10
2. Focus attention on windows
3. No need for mobile
4. GUI, again functional and intuitive
5. TBD, there is USB to RS232, whatever need for safety, reliability, functionality
6. Use standard language, something CS and CE, would know, C++ python for example
7. GUI will adjust parameters
8. API will need to be developed

-Functions

1. Screen for storage mode, RPM, how much energy, whatever is required for storage and supply, emergency stop, accel/decel rates, ramp up ramp down, force values make it operate, store history of previous runs/data logging, error log, measure power consumption
2. Absolute needed: manual control and error log, second priority is storage supply screen and storing history
3. User routines are a possibility
4. Yes, back to manual control
5. YES to emergency stop
6. No user accounts
7. Interface will impose limits on operating parameters
8. No superusers

Meeting 4 2/4/2016

Santora's feedback from client interview transcript:

- Interface page can be multiple pages, not just one. Up to our discretion
- Would like to have (needs) password protected settings page
- Otherwise looks good

Transcript will be signed next meeting.

Ready to move to engineering specifications.

Ben will try to have that done by next meeting, will email if needs help.

Eric met with David from Flyrollers, will help with control algorithms.

Meeting 5 2/11/2016

Feedback from technical specifications

Benchmark for emergency stop

Control update for current is TBD

position is 10k

Part of the API is determining how fast is the information coming through

Include estimations in tech specs - these are our goals

Meeting 6 2/18/2016

Dr. Santora is absent.

Team reports that Qt and GitHub has been installed, and members are on communication page.

Action Items for this week:

- Continue getting familiar with Qt and GitHub
- Eric will work with Flyrollers in continuing communication protocol development

Meeting 7 2/25/2016

Each member to develop storyboards for GUI design.

Eric will be liaison to flyrollers so we can get values, ranges, increments, units, etc interpreted from CE to CS/human.

Include in portfolio specifications about Qt and Github.

Meeting 8 3/3/2016

Next Tuesday is snapshot day.

Prepare poster.

Summarize what we have done so far.

For GUI – be able to set acceleration

Projected velocity

Eric is official team leader.

Thomas is secretary.

Action Items:

Ben and Jesse: combine storyboard

Thomas: compile minutes

Eric: poster and portfolio cover

Official name: FlyCAM – Flywheel control and monitoring

Official abstract: A storage system of any kind is useless without a control interface. Our user-friendly design allows for precise control of Idaho's Flywheel Energy Storage System. Additionally, it provides intuitive monitoring of the Flywheel's performance.

Meeting 9 3/10/2016

Eric: Over break I'm planning on getting the delfino to accept commands over serial so we will have a framework for commands from the GUI.

Let me know if there is anything else I need to know

Thomas: Will print out minutes and put them in portfolio, work on Qt interface to match design, also take care of expo registration

Jesse: Will talk with Santora about budget for expo

Ben: Look into IO libraries in Qt

Santora: Create gant chart for timeline, consider what tasks we need to do to get this completed, and how long they are going to take

Meeting 10 3/17/2016

Li: Wikipedia review next Thursday, preliminary design review due April 15

Eric: Did reading on serial communication. Not sure how to use putty to pipe information.

Ben: Qt libraries exist to do RS232 serial communication.

Jesse: Made draft of timeline and budget.

Thomas: Built GUI from designs. Will print off minutes and include them in portfolio.

Meeting 11 3/31/2016

Dr. Santora:

Requirements-

- Add graphs:
 - Upper x, y displacement;
 - Lower x,y displacement;
 - Rotational location
- Figure out how to get all previous values when changing between graphs
- Recording:
 - Hit record, program starts writing all values comma delimited to file
 - Hit stop, program stops writing to file

Preliminary design review- have an hour sometime between 12:30 and 4:30 April 12

Jesse: Code review with Tom on Monday

Tom: Added selectable graphs

Ben: Created flycam API prototype

Meeting 12 4/7/2016

Thomas: Added upper and lower displacement, and rotation graphs. Graphs now show historical data points when clicked by simply having duplicate graphs. Changed selection aesthetics a little bit. To

Santora: What data is to go into these graphs/how is it supposed to look? To FIGs: what goes on config page?

-Key bindings, limits, and password protection.

Jesse: Have recording to file up and going. Will work on password functionality.

Ben: Working on software API. Published it to wiki. Working on binary format to send information over UART to controller. Thomas, send me minutes.

Eric: Got communication with 77D working. Once Ben has API finalized I can get command parsing up and running. Will reserve room for design review.

Design review April 12th 2:15

Meeting 13 4/14/2016

Thomas: Spacebar is a global shortcut, but got it to be responsive for our program. Emergency stop is now fully map-able.

Jesse: Made presentation for design review. Since Tuesday have looked into password protection. Is way to get line edit to show dots instead of chars. Class exists for cryptic hashing. Will try to have it in by next week.

Ben: Went back and revised UART syntax. Made a list of actually commands for sending and receiving commands from controller.

Eric: Design review went well. Been working on API with Ben. Mostly flushed out; coming close to completion.

Santora: Change displacement graphs to real time AND Cartesian.

Li: Turn in Logbook on day of Expo

Meeting 14 4/21/2016

Thomas: Added extra graphs for all desired displacement values. Changed buttons around to be more intuitive. Got rid of paint-fill for non-differentiating comparison graphs. Will bring monitor to expo for demonstration.

Eric: Got API more flushed out. Need to make a couple of changes to make it more device agnostic. Will write up short technical document on what the API is doing.

Ben: Worked on poster for EXPO. Have a little bit left to do, will finish up this week. Suggestions?

Jesse: Working on password protection stuff. Got back-end kind of working. Created dialog to set and reset the password.

Meeting 15 4/28/2016

Shift schedule for EXPO

Tom: 8:00AM to 12:00PM

Eric: Tentative all day, break between 12:00 and 1:00

Ben: 12:00 to 2:30PM

Jesse: 12:00 to 4:00PM

Minutes:

Tom: Will print off source code and put into portfolio.

Jesse: Printed off documentation for Qt, got poster printed.

Meeting 17 9/1/2016

Jesse: Make sure we review code before merging on Github. Cleaned up the repo, need Tom to review. Need to make stub methods for getting/setting values for MCU.

Eric: Working on getting code from flyroller team. Stuck until then.

Tom: Will clean up and rename source code to make it easily readable.

Ben: Will prepare for next week's design review.

Design review scheduled for September 8. We are to show our progress so far to Dr. Hess.

Meeting 18 9/8/2016

PowerPoint and Demonstration

Hess: Revise dates for goals. December 2: public demonstration; November 18: Testing Done; after November 18: documentation.

Meeting 19 9/15/2016

Optional meeting October 14, mostly for 1st semester students.

First logbook due date October 15.

Snapshot day October 11.

Ben: Got Qt, checking out serial interface.

Eric: Test bench, MCU communication research.

Jesse: Code clean up: architecture and variable renaming

Tom: Looking into getters/setters for variables. Current values are kind of hard-coded. Use floats not doubles.

Action Items:

Eric: API, Serial commands

Jesse: Create flywheel operations class template for changing values externally

Ben: Serial communications library

Tom: Start taking minutes, will help Jesse, change graphs to not reflect changes until after hitting 'go'

Meeting 20 9/22/2016

Tom: Completed action items from last week.

Jesse: Added class for getters/setters for velocity, acceleration, and jerk. No more dummy values, class will now be used to set.

Eric: Reformat API commands in header file, created structure for set points.

Ben: Absent

Action Items:

Eric: Get parsing function finished, get test bench to produce values in response to commands.

Tom: UI improvements, commenting, general cleanup. Look into uptime metric.

Jesse: Work on cleaning up code. Update what's recoding in log file.

Meeting 21 9/29/2016

Physical meeting cancelled due to majority of group unable to attend.

Progress report:

Jesse: When recording, the program now records all values. Moved recording functions into their own class.

Tom: Put in the code to gray out the change settings function until some characters are entered. Continued documenting and commenting.

Ben: Have a couple bugs to fix in my code. Request: menu in GUI for serial settings.

Eric: Met with Ben to begin testing the serial communications.

Meeting 23 10/13/2016

Eric: Absent, reports he will spend today working on getting the test bench completed.

Tom: Continuing to document and comment. Looking into requested graph feature. Will collaborate with Jesse.

Ben: Met with Eric, got code running, redesigned interface class in the GUI. Can now write to Device. Type conversions have been taken care of.

Jesse: Looking into modeling expected values and changing colors on the graph.

Action Items:

Implement working and demonstration mode, graph to change at acceleration rate, errors coming back from MCU.

Meeting 24 10/20/2016

Tom: Wrote code to reflect rate of change on velocity graph. Accuracy and testing still necessary.

Eric: Scheduling problems, could not meet with Ben. Downloaded Qt so I can do some more independent work. Working on getting and setting values.

Ben: Working on interface. Has demo working, and accepts emergency stop command.

Jesse: Refactored code to make changing the colors easier. Graphs are a bunch of different colors which are all meaningful.

Action Items:

Eric: Qt working on my pc. Then will be able to test.

Tom: Confirm accuracy of slope. Composition of variables (no more velocity in RPM).

Ben: Get demo object working with all the commands, then work on sending commands over serial communication.

Jesse: Refactoring graphs to make more object-oriented.

Hess: Everything should be done by 9th of December.

Meeting 25 10/27/2016

Eric: Been working with test bench. Having some issues with communication on serial port. Did more work adjusting API. Will work with Ben to correct problems.

Tom: Worked on modeling slopes from acceleration and jerk values. Looks correct, numbers still need to be verified.

Jesse: Graph class being implemented. Moved a bunch of code around to make graphs more object-oriented. Will work on commenting code and doing unit tests.

Ben: Looked into threads in Qt. Will add code to GUI to add serial data to raw output.

David: If read values are high than target value throw error. At 5% shutoff, at 2% error/warning.

Wikipage review, team member citizenship due November 8. Logbook due as final deliverable.

Meeting 26 11/3/2016

Eric: Issue was not bug, but incorrect line specified. MCU to GUI working. GUI to MCU not fully functional.

Ben: Majority of serial code merged into master branch. Wrote dialog box to select serial interface.

Jesse: Looked into QTimer, cannot figure out what is causing FPS discrepancy. Also looked into unit testing framework, could not find a good one.

Tom: Still need to implement frame and graph scale locking. Was busy this week with other work.

Action Items:

Eric: Find out why receive interrupt is not firing. Will look into FPS discrepancy.

Tom: Same as above.

Jesse: Find unit tests. May have to give up on that if no luck.

Ben: Fix bus in dialog box.

Li: Citizenship and Wikipage review due November 4.

Meeting 27 11/10/2016

Tom: Graph can be locked to show entire range. This demonstrates ability to respond to user feedback. Reviewed Ben's code and approved submission.

Li: Final report due for deliverables. Poster needs to be formal looking. All due after thanksgiving.

Eric: Still having trouble with configuration on MCU. Its transmitting, but not receiving.

Ben: Device can be set and configured from GUI.

Action Items:

Tom: 5% buffer on locked scale. Move all initializers to constructor. Take absolute value of user-input max values. Type up meeting notes.

Eric: More MCU stuff.

Ben: work on sending commands from GUI to MCU.

Jesse: Looking into Qt test suite. Not very easy. Look into documentation/comments.

Meeting 28 11/17/2016

Eric: has an issue with serial RX, that is apparently a framing error. At least that is what he is getting from the FIFO registers. The confusing part is that it happens before anything is sent to the device. Seems to initialize that way. He is waiting to hear back from TI about the issue. Even old code is now having the error, on Windows and Linux, with several USB cables.

Tom: added a 5% buffer to the graph height when lock, barring negative values from being entered into the configuration (takes the absolute value.) and some general code clean up for optimization/readability.

Ben: rewrote part of the queueing system for commands. There are no packets. We just write characters to a buffer. That gets converted to a packet automatically.

Jesse: figured out how to make Qt-style comments that are compatible with doxygen. Doxygen seems useful for generating documentation.

Hess: Keep Hess informed about when presentation is. In regards to priorities, we should just be able to communicate to the next person what we've done. That is the most important, the handoff. Documentation is usually lacking.

Poster- put together things about major things we've done. Just show what we want to show. Whatever subset shows a nice coherent package. Maybe include some lessons learned. Be gracious in defeat. Try not to whine though. Make sure next group doesn't make same mistake.

Final report: has to address pretty much everything we've done, in enough detail that the next team will be clearly informed about everything we've done. The wiki page also needs to be very thorough.

Oral presentation: should address major points of success on project We only have 20 minutes to say everything. Dumb it down just a tad. There will be a mixed audience. Focus on main victories. Less so on caveats, small stuff. Look at deliverables, what was asked of us, go through and prove how we've hit our marks. Emphasis on victories. Dr. Li schedules the talks.

Action Items:

Eric: If hearing back from TI doesn't work, he will try to do a super stripped down implementation just so we can at least present something working.

Tom: Going to type up our meeting notes over thanksgiving break, as well as add Qt-style comments to the files he authored.

Jesse: Will continue to work on documentation. He will look into some testing stuff, but it isn't a priority. Documentation is more important.

Ben: will try to figure out Eric's problem over the break. Also, he will try to port code to the microcontroller.